IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

In re Patent Application of: **LEAMING**	
Serial No. **10/829,008**	Examiner: **E. UNELUS**
Confirmation No. **5509**	Art Unit: **2181**
Filing Date: **April 21, 2004**	Attorney Docket No. **02-AU-092 (52042)**
For: **SMART CARD WITH SELF-DETACHMENT FEATURES AND RELATED METHODS**	

APPELLANTS' APPEAL BRIEF

MS Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is Appellant's Appeal Brief together with the requisite $540 large entity fee for filing a brief. If any additional extension and/or fee is required, authorization is given to charge Deposit Account No. **01-0484**.

(1) Real Party in Interest

The real party in interest is STMICROELECTRONICS, INC., assignee of the present application, as recorded at reel 015253, frame 0333.

(2) Related Appeals and Interferences

U.S. Patent Application No. 10/829,007, which is also assigned to the present assignee, is currently on appeal before the Board of Patent Appeals and Interferences, and this appeal may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal. The Appeal for the '007 application was filed on August 5, 2008, and the Examiner's Answer (a copy of which is attached hereto in Appendix C) was mailed on September 16, 2008. No decision in the Appeal for the '007 application has been issued by the Board at the time of filing this Appeal Brief.

(3) Status of the Claims

Claims 1, 2, 5-13, 16-35, and 38-44 are pending in the application, stand rejected, and are all being appealed herein.

Claims 3, 4, 14, 15, 36, 37, and 45-50 have been canceled and are not appealed herein.

(4) Status of the Amendments

All amendments have been entered and there are no further pending amendments. A copy of the claims involved in this appeal is attached hereto as Appendix A.

(5) Summary of the Claimed Subject Matter

Independent Claim 1 is directed to an integrated

circuit (26) for a smart card (24) including at least one data terminal (34', 35') for providing communications with a host device (21) over a system bus, and a processor (31). The processor (31) is for providing an attachment signal on the at least one data terminal (34', 35') for recognition by the host device (21), cooperating with the host device (21) to perform an enumeration based upon at least one default descriptor. The processor (31) is also for selectively removing the attachment signal from the at least one data terminal (34', 35') and thereafter again providing the attachment signal on the at least one data terminal and cooperating with the host device (21) to perform a new enumeration based upon at least one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus. (Specification: page 9, lines 21-29 (paragraph 0026); page 12, line 24 through page 19, line 8 (paragraphs 0033 through 0048); and FIGS. 1 and 2, reproduced below).

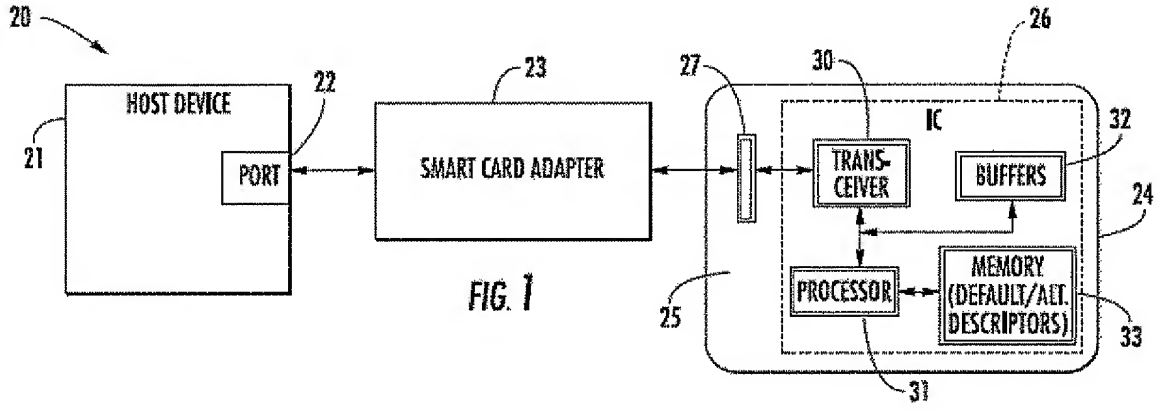


FIG. 1

FIG. 1 of the Present Application

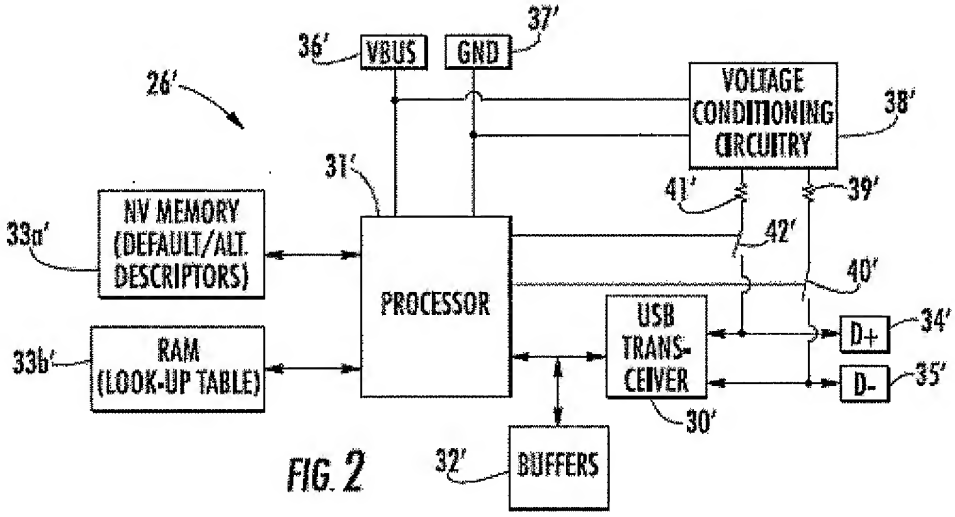


FIG. 2 of the Present Application

Independent Claim 12 is directed to a smart card (24) including a smart card body (25) and an integrated circuit (26) carried by the smart card body. The integrated circuit (26) includes at least one data terminal (34', 35') for providing communications with a host device (21) over a system bus, and a processor (31). The processor (31) is for providing an attachment signal on the at least one data terminal (34', 35') for recognition by the host device (21), and cooperating with the host device to perform an enumeration based upon at least one default descriptor. The processor (31) is also for selectively removing the attachment signal from the at least one data terminal (34', 35') and thereafter again providing the attachment signal on the at least one data terminal and cooperating with the host device (21) to perform a new enumeration based upon at least

one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus. (Specification: page 9, lines 21-29 (paragraph 0026); page 11, lines 8-24 (paragraph 0030); page 12, line 24 through page 19, line 8 (paragraphs 0033 through 0048); and FIGS. 1 and 2, reproduced above).

Independent Claim 23 is directed to a smart card system (20) including a host device (21) and associated system bus, a smart card adapter (23) connected to the host device via the system bus, and a smart card (24) to be read by the smart card adapter and comprising a smart card body (25) and an integrated circuit (26) carried by the smart card body. The integrated circuit (26) includes at least one data terminal (34', 35') for providing communications with the host device (21) over the system bus, and a processor (31). The processor (31) is for providing an attachment signal on the at least one data terminal (34', 35') for recognition by the host device (21), and cooperating with the host device to perform an enumeration based upon at least one default descriptor. The processor (31) is also for selectively removing the attachment signal from the at least one data terminal (34', 35') and thereafter again providing the attachment signal on the at least one data terminal and cooperating with the host device (21) to perform a new enumeration based upon at least one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus. (Specification: page 9, lines 21-29 (paragraph 0026); page 11, lines 8-24 (paragraph 0030); page 12, line 24 through page 19, line 8 (paragraphs 0033 through 0048); and FIGS. 1 and 2, reproduced above).

Independent Claim 34 is directed to a method for operating a smart card (24) including at least one data terminal (34', 35'). The method includes providing an attachment signal on the at least one data terminal (34', 35') for recognition by a host device (21) over a system bus (Block 51), and cooperating with the host device over the system bus to perform an enumeration based upon at least one default descriptor (Block 52). The method further includes selectively removing the attachment signal from the at least one data terminal (34', 35') (Block 55) and thereafter again providing the attachment signal on the at least one data terminal (Block 57), and cooperating with the host device (21) to perform a new enumeration based upon at least one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus (Blocks 58, 58'). (Specification: page 9, lines 21-29 (paragraph 0026); page 12, line 24 through page 19, line 8 (paragraphs 0033 through 0048); and FIGS. 1-4, of which FIGS. 3 and 4 are reproduced below).

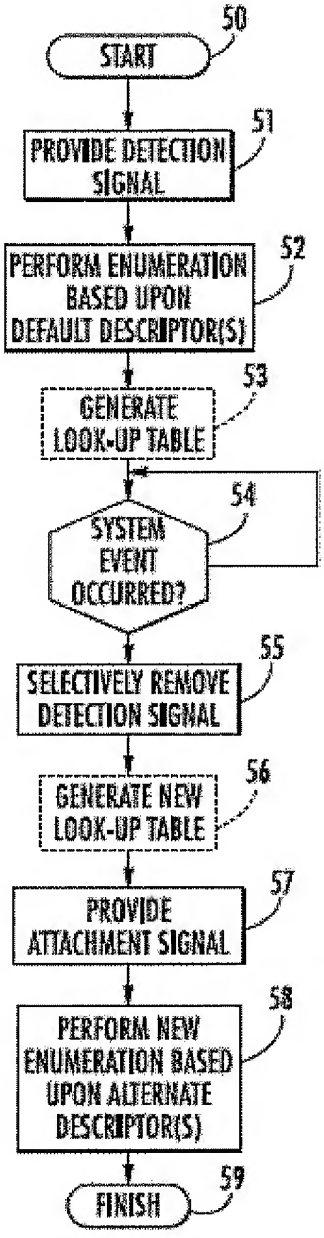


FIG. 3 of the Present Application

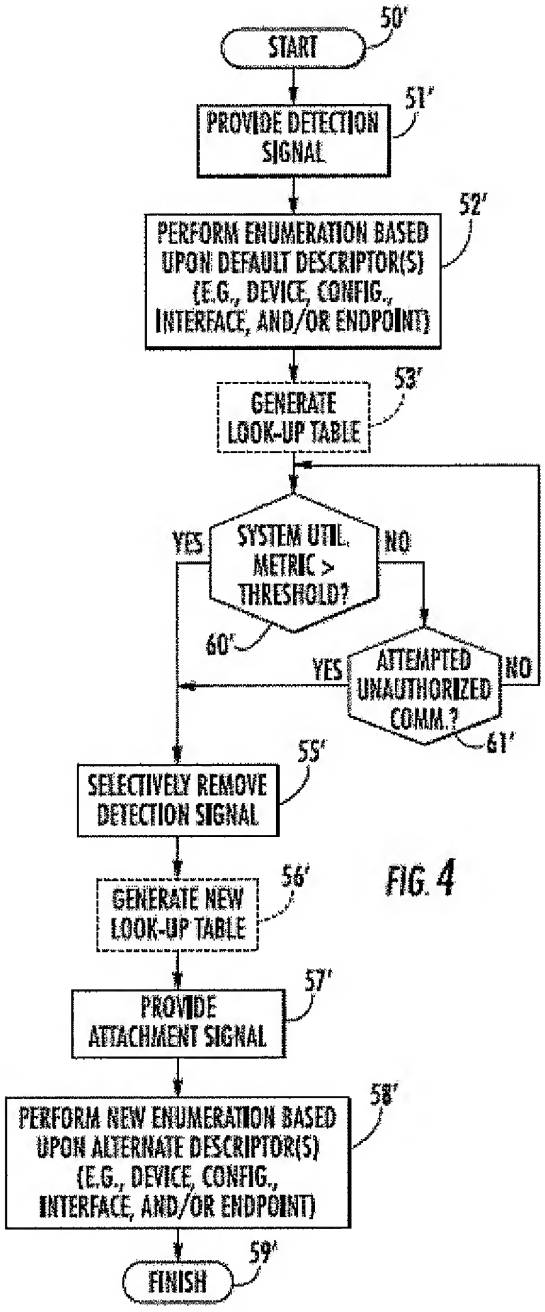


FIG. 4

FIG. 4 of the Present Application

(6) Grounds of Rejection to be Reviewed On Appeal

The Examiner rejected Claims 1, 2, 5-13, 16-35, and 38-44 under 35 U.S.C. §103(a) over U.S. Patent Pub. No. 2005/0251596 to Maier (hereinafter "Maier") in view of U.S. Patent Pub. No. 2005/0108571 to Lu et al. (hereinafter "Lu et al.").

(7) Argument

As will be described in greater detail below, Appellant submits that the Examiner's rejections of the claims are improper. More specifically, the Examiner has mischaracterized the teachings of the prior art, and thus the proposed combination of these references fails to properly provide all of the elements recited in the claims. Accordingly, Appellant respectfully requests that the Board of Patent Appeals and Interferences reverse the Examiner and withdraw the rejections.

A. The 35 U.S.C. §103(a) Rejection Over Maier and Lu et al.

1. Claims 1, 2, 5-13, 16-35, and 38-44

The Examiner rejected independent Claims 1, 12, 23, and 34 over Maier in view of Lu et al. The Examiner initially appears to indicate in the Response to Arguments section on page 2 of the Final Office Action mailed May 23, 2008 (hereinafter "Final Office Action") that Maier somehow teaches the claimed recitation of "providing at least one alternate descriptor to the host device and cooperating with the host device over the system bus to perform a new enumeration based thereon based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus." For the Board's convenience,

this portion of the Final Office Action is reproduced below:

> "With respect to "*based upon allocations of system bus bandwidth to the device communicating with the host device over the system bus*" (see fig. 1, which discloses communication between the device and the host and paragraph 0055 of Maier, which discloses, 'in a second enumerating step ENUM2, the USB host enumerates the USB device. As illustrated in FIG. 2, only the descriptors (II) associated to the services (SI, S2, S3) which have been activated and the descriptor associated to the standard service (S0) will be retrieved'. Maier discloses a negotiation flag (see par. 0041), which is being use as a metric. The metric exceeding a threshold is the negotiation flag moving from not active-to-active. As stated in paragraphs (steps) 0042 to 0049, the negotiation flag getting to an active state is exceeding a threshold. See also fig. 2 of Lu, which discloses multiple devices (cards 201cs) communicating with a host device)." Final Office Action, page 2.

Nonetheless, on page 5 of the Final Office Action the following quote from the Examiner appears to correctly acknowledge that Maier does not properly provide the above-noted claim element, but that FIG. 2 of Lu somehow does:

> "In regards to "*based upon allocations of system bus bandwidth to the device communicating with the host device over the system bus*", see fig. 2 of Lu, which discloses multiple devices (cards 201cs) communicating with a host device."

Accordingly, Applicant is not entirely clear where the Examiner actually believes the above-noted recitation is properly found. In either event, neither one of the cited references properly

provides the above-noted claim recitation, and each of the above-quoted assertions from the Final Office Action will be addressed in turn.

a) Maier

Turning initially to Maier, this reference is directed to a USB system including a main device and an auxiliary device arranged to co-operate with one another. The auxiliary device provides a core functionality and has descriptors associated therewith. The auxiliary device has at least one descriptor that defines a functionality that is different from the core functionality. See, e.g., paragraphs 0016-0019 and FIG. 1 of Maier, which is reproduced below.

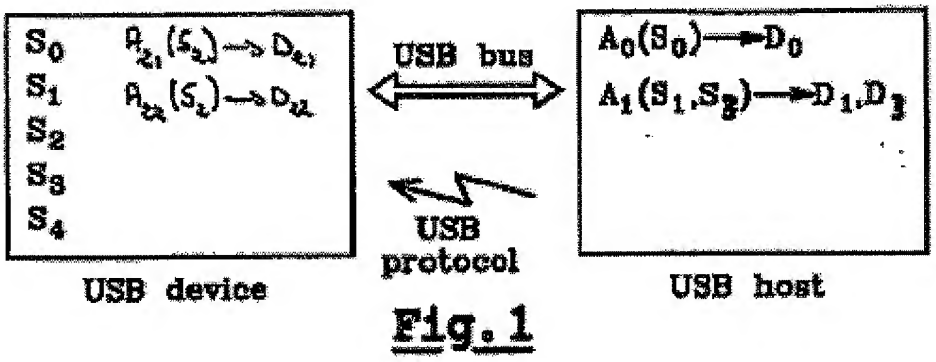


FIG. 1 of Maier

In particular, the purpose of the Maier system is to initially present a USB smart card device to a computer as a generic mass storage device so that it will be recognized by the computer without any special device drivers or applications installed on the computer. Thus, by simulating a mass storage

device, a user is able to then install an application driver on the computer so that the smart card can subsequently be used for its desired purpose (i.e., as an internet login smart card) when re-enumerated (i.e., re-connected) with the host computer. See, e.g., paragraphs 0017 and 0018 of Maier, which are reproduced below:

> "[0017] The auxiliary device can be for, example, a USB device in the form of a smart card. The main device can be, for example, a USB host, in particular a computer. The smart card may comprise as a core functionality, for example, an internet login application. The functionality that is different from the core functionality can be, for example, a mass storage functionality."
>
> "[0018] Thanks to the invention, the Smart Card (USB device) is seen as a mass storage. It is then possible to install a driver and/or an application from the USB device by simulating that the USB device is a mass storage. The USB device can thus be used in any USB host, even if the driver(s) are not installed nor available, since the driver(s) is(are) available in the USB device itself. A user can thus use, for example, the login application directly from the USB device." (Emphasis added).

The USB device in the Maier system does not detach and re-attach itself to the USB bus based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus. Rather, the reason for its detachment has nothing to do with any other devices that are communicating with the host, but rather is merely for the purpose of installing additional services not originally initialized with the device. That is, the point of this configuration is simply to make the USB device appear as a mass storage device to the host upon re-

attachment, as noted in paragraph 0018 quoted above.

As for FIG. 1 of Maier, the Examiner states that this figure "discloses communications between the device and the host." Final Office Action, page 2. Even so, this does not provide the above-noted claim recitation. With respect to paragraph 0055, which is reproduced below, this paragraph merely discusses performing the second enumerating step listed above so that the different services or applications installed when the smart card was previously connected in the mass storage mode can be used.

> "[0055] in a second enumerating step ENUM2, the USB host enumerates the USB device. As illustrated in **FIG. 2**, only the descriptors (II) associated to the services (**S1**, **S2**, **S3**) which have been activated and the descriptor associated to the standard service (**S0**) will be retrieved." Maier, paragraph 0055.

That is, paragraph 0055 of Maier simply discusses the step of re-enumerating the smart card to be an internet login card once the appropriate application has been installed on the computer, as noted above. Accordingly, this portion of Maier simply fails to teach or properly provide that the re-enumeration is performed based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus.

In the Examiner's Answer in the '007 appeal noted in Section (2) above, the Examiner additionally points to paragraph 0034 of Maier as support for teaching the above-noted recitation, which is reproduced below for the Board's convenience:

> "[0034] Two of these four modes require a bandwidth reservation, which is accorded or not by

> the USB host after an enumeration phase, depending on the bandwidth already reserved by other USB devices, which are plugged onto the USB bus." (Emphasis added).

The Examiner latches on to the "depending on the bandwidth already reserved by other USB devices" language as teaching a re-enumeration by a smart card based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus. However, the Examiner overlooks the key portion of paragraph 0034, namely that this paragraph is discussing whether the USB host (i.e., not the attached smart card) is according a USB peripheral connection to the USB (or not) based upon how much system bus bandwidth is already allocated to other peripheral devices. That is, this paragraph is simply summarizing the USB protocol approach of allowing a host to exclude peripheral devices from accessing the USB if adequate bandwidth is not available (i.e., because there are already too many other USB peripherals connected to the USB).

Stated alternatively, the above-noted independent claims are not merely reciting that a USB host can exclude peripherals from accessing the USB if there is already too great of a demand on available USB bandwidth, as Maier teaches. Rather, the above noted independent claims recite that it is the smart card (e.g., the smart card processor) that selectively removes its attachment signal from the system bus and re-enumerates based upon an alternate descriptor(s) based upon allocations of the system bus bandwidth to other devices communicating with the host device over the system bus. Here again, neither this passage nor any other passage of Maier teach or properly provide this claim recitation.

b) Lu et al.

Turning now to Lu et al., this reference is directed to a smart card that is capable of acting as a network node providing secure communication to other nodes on a network. See, e.g., paragraph 0022 and FIG. 2 of Lu et al., which are reproduced below

> "[0022] In a preferred embodiment, the invention provides an infrastructureless resource-constrained device, for example, a smart card, capable of acting as a full-fledged network node providing secure communication to other nodes on the network and in which the security boundary is located on the infrastructureless resource-constrained device. Such infrastructureless resource-constrained devices can easily be adapted so that the resource-constrained device can provide many of the functions traditionally associated with full-fledged network nodes."

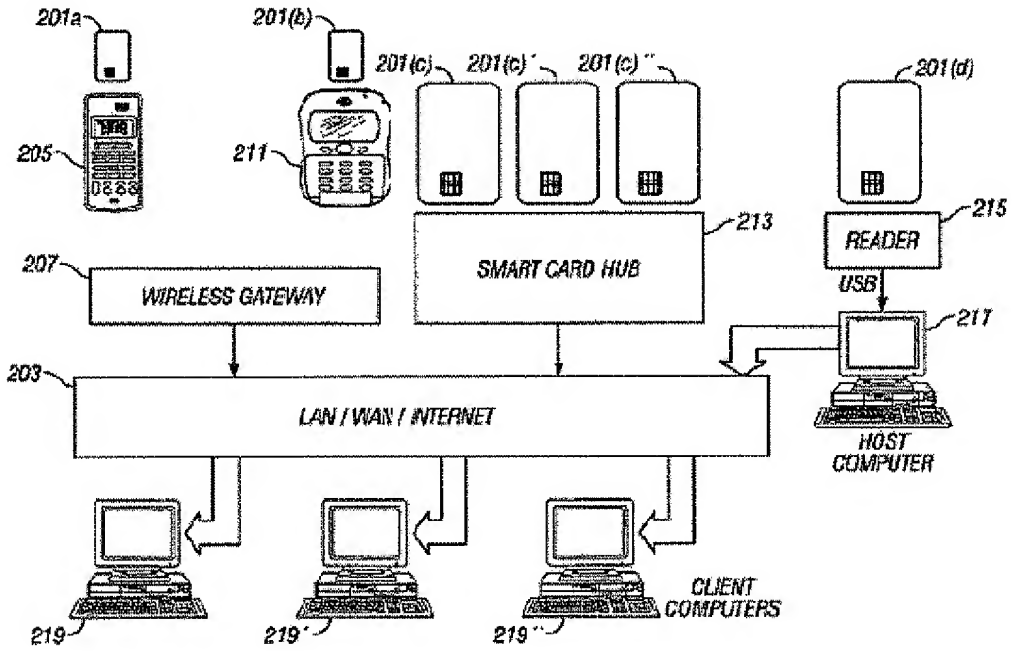


FIG. 2 of Lu et al.

While FIG. 2 of Lu et al. shows the smart card connected in a network with other devices as the Examiner notes, this still does not provide the claimed recitation of a smart card that re-enumerates itself using an alternate device descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus. Neither does any other portion or drawing of Lu et al. provide this claimed element.

In stark contrast to Maier and Lu et al., the invention recited in the above-noted independent claims advantageously allows re-enumeration using one or more alternate descriptors to allow more efficient utilization of limited bus bandwidth when other devices are sharing the same system bus, for example. See, e.g., paragraphs 0015, 0043-0044, and 0047 of the originally

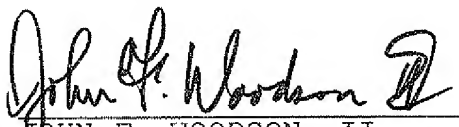
filed specification. The Examiner provides no finding that one of ordinary skill in the art would have recognized that applying the techniques of Maier and Lu et al. would have yielded such advantageous and improved results.

As such, neither Maier nor Lu et al. (nor any of the remaining prior art of record) properly provides the above-noted critical deficiencies recited in each of the independent claims. Moreover, there is no proper finding that one of ordinary skill in the art would have appreciated that the application of the techniques of the prior art would have yielded the advantageous results provided by the claimed devices, systems, and methods. Accordingly, a *prima facie* case of obviousness has therefore not been established. It is therefore submitted that independent Claims 1, 12, 23 and 34 are patentable. Their respective dependent claims, which recite yet further distinguishing features, are also patentable over the prior art for the same reasons and require no further discussion herein.

CONCLUSIONS

In view of the foregoing arguments, it is submitted that all of the claims are patentable over the prior art. Accordingly, the Board of Patent Appeals and Interferences is respectfully requested to reverse the earlier unfavorable decision by the Examiner.

Respectfully submitted,



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APPENDIX A - CLAIMS ON APPEAL
FOR U.S. PATENT APPLICATION SERIAL NO. 10/829,008

1. An integrated circuit for a smart card comprising:

at least one data terminal for providing communications with a host device over a system bus; and

a processor for

providing an attachment signal on the at least one data terminal for recognition by the host device,

cooperating with the host device to perform an enumeration based upon at least one default descriptor, and

selectively removing the attachment signal from the at least one data terminal and thereafter again providing the attachment signal on said at least one data terminal and cooperating with the host device to perform a new enumeration based upon at least one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus.

2. The integrated circuit of Claim 1 further comprising at least one power terminal connected to said processor, and wherein said processor receives power via said at least one power terminal during removal of the attachment signal.

5. The integrated circuit of Claim 1 wherein said processor monitors communications with the host device during removal of the attachment signal.

6. The integrated circuit of Claim 1 wherein the at least one alternate descriptor comprises at least one device descriptor.

7. The integrated circuit of Claim 1 wherein the at least one alternate descriptor comprises at least one configuration descriptor.

8. The integrated circuit of Claim 1 wherein the at least one alternate descriptor comprises at least one interface descriptor.

9. The integrated circuit of Claim 1 wherein the at least one alternate descriptor comprises at least one endpoint descriptor.

10. The integrated circuit of Claim 1 wherein said at least one data terminal comprises first and second data terminals for differential data signals.

11. The integrated circuit of Claim 1 further comprising a USB transceiver connected between said processor and said at least one data terminal.

12. A smart card comprising:

a smart card body; and

an integrated circuit carried by said smart card body and comprising

at least one data terminal for providing communications with a host device over a system bus,

and

a processor for

providing an attachment signal on the at least one data terminal for recognition by the host device,

cooperating with the host device to perform an enumeration based upon at least one default descriptor, and

selectively removing the attachment signal from the at least one data terminal and thereafter again providing the attachment signal on said at least one data terminal and cooperating with the host device to perform a new enumeration based upon at least one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus.

13. The smart card of Claim 12 wherein said integrated circuit further comprises at least one power terminal connected to said processor, and wherein said processor receives power via said at least one power terminal during removal of the attachment signal.

16. The smart card of Claim 12 wherein said processor monitors communications with the host device during removal of the attachment signal.

17. The smart card of Claim 12 wherein the at least one alternate descriptor comprises at least one device

descriptor.

18. The smart card of Claim 12 wherein the at least one alternate descriptor comprises at least one configuration descriptor.

19. The smart card of Claim 12 wherein the at least one alternate descriptor comprises at least one interface descriptor.

20. The smart card of Claim 12 wherein the at least one alternate descriptor comprises at least one endpoint descriptor.

21. The smart card of Claim 12 wherein said at least one data terminal comprises first and second data terminals for differential data signals.

22. The smart card of Claim 12 further comprising a USB transceiver connected between said processor and said at least one data terminal.

23. A smart card system comprising:

a host device and associated system bus;

a smart card adapter connected to said host device via said system bus; and

a smart card to be read by said smart card adapter and comprising a smart card body and an integrated circuit carried by said smart card body, said integrated circuit comprising

at least one data terminal for providing

communications with a host device over said system bus, and

a processor for

providing an attachment signal on the at least one data terminal for recognition by said host device,

cooperating with said host device to perform an enumeration based upon at least one default descriptor, and

selectively removing the attachment signal from the at least one data terminal and thereafter again providing the attachment signal on said at least one data terminal and cooperating with said host device to perform a new enumeration based upon at least one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with said host device over said system bus.

24. The smart card system of Claim 23 wherein said integrated circuit further comprises at least one power terminal connected to said processor, and wherein said processor receives power via said at least one power terminal during removal of the attachment signal.

25. The smart card system of Claim 23 wherein the system event comprises a system utilization metric exceeding a threshold.

26. The smart card system of Claim 23 wherein the

system event comprises the occurrence of attempted unauthorized communications.

27. The smart card system of Claim 23 wherein said processor monitors communications with said host device during removal of the attachment signal.

28. The smart card system of Claim 23 wherein the at least one alternate descriptor comprises at least one device descriptor.

29. The smart card system of Claim 23 wherein the at least one alternate descriptor comprises at least one configuration descriptor.

30. The smart card system of Claim 23 wherein the at least one alternate descriptor comprises at least one interface descriptor.

31. The smart card system of Claim 23 wherein the at least one alternate descriptor comprises at least one endpoint descriptor.

32. The smart card system of Claim 23 wherein said at least one data terminal comprises first and second data terminals for differential data signals.

33. The smart card system of Claim 23 further comprising a USB transceiver connected between said processor and said at least one data terminal.

34. A method for operating a smart card comprising at least one data terminal, the method comprising:

providing an attachment signal on the at least one data terminal for recognition by a host device over a system bus;

cooperating with the host device over the system bus to perform an enumeration based upon at least one default descriptor; and

selectively removing the attachment signal from the at least one data terminal and thereafter again providing the attachment signal on the at least one data terminal and cooperating with the host device to perform a new enumeration based upon at least one alternate descriptor based upon allocations of system bus bandwidth to other devices communicating with the host device over the system bus.

35. The method of Claim 34 wherein the smart card further comprises at least one power terminal connected to the processor, and wherein the smart card receives power via the at least one power terminal during removal of the attachment signal.

38. The method of Claim 34 further comprising monitoring communications with the host device during removal of the attachment signal.

39. The method of Claim 34 wherein the at least one alternate descriptor comprises at least one device descriptor.

40. The method of Claim 34 wherein the at least one alternate descriptor comprises at least one configuration

descriptor.

41. The method of Claim 34 wherein the at least one alternate descriptor comprises at least one interface descriptor.

42. The method of Claim 34 wherein the at least one alternate descriptor comprises at least one endpoint descriptor.

43. The method of Claim 34 wherein the at least one data terminal comprises first and second data terminals for differential data signals.

44. The method of Claim 34 wherein the smart card operates in a universal serial bus (USB) mode.

In re Patent Application of:
LEAMING
Serial No. **10/829,008**
Filing Date: **April 21, 2004**

APPENDIX B – EVIDENCE APPENDIX PURSUANT TO 37 C.F.R. § 41.37(c)(1)(ix)

None.

In re Patent Application of:
LEAMING
Serial No. **10/829,008**
Filing Date: **April 21, 2004**
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APPENDIX C – RELATED PROCEEDINGS APPENDIX
PURSUANT TO 37 C.F.R. § 41.37(c)(1)(x)

1) Examiner's Answer from appeal of U.S. Patent Application No. 10/829,007, mailed September 16, 2008.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
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Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/829, 007
Filing Date: April 21, 2004
Appellant(s): Leaming

John F. Woodson, II
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/05/08 appealing from the Office action mailed 03/06/08

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Final Rejection

The appellant's statement of the status of the final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statements of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2005/0251596	Maier	11-2005
2005/0108571	Lu	05-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

REJECTIONS BASED ON PRIOR ART

Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1, 4-10, 13-19, 22-28, and 31-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier (US 2005/0251596) in view of Lu et al. (2005/0108571).

6. As per **claims 1, 10, and 28**, Maier discloses "An integrated circuit for a smart card **(USB device of fig. 1)** and comprising:

a transceiver **(input and output device) (see fig. 1 and paragraph 0006, which discloses an interface of the device)**; and

a processing system for communicating with a host device **(USB host of fig. 1)** over a system bus **(the USB bus , as discloses in fig. 1)** via the input and output device, said processing system for providing at least one default descriptor **[descriptors (I)]** to the host device **(see paragraph 0043)**,

cooperating with the host device to perform an enumeration based upon the at least one default descriptor **(paragraph 0043 discloses "in a first enumerating step ENUM1, the USB host will enumerate the USB device. In other words, as illustrated in FIG. 2, the USB host will retrieve from the USB device to the USB host only the descriptors (I) associated to the standard service SO and to the mass storage service S1")**, and

providing at least one alternate descriptor **[descriptors (II)]** to the host device and cooperating with the host device to perform a new enumeration based thereon **(ENUM2, as discloses in paragraph 0055) [(see paragraph 0055)]**, based upon allocations of system bus bandwidth to the devices communicating with the host device over the system bus **(see paragraph 0034, which discloses 'allocating' memory base on the bandwidth of devices)**.

Maier discloses the functionality of the smart card and fail to specifically discloses the structure of the card and more than one other devices.

However, LU discloses smart card to be an integrated circuit having a transceiver, a processor and descriptors. For example, as evidence in para. 0004, Lu discloses, "An example of such a resource-constrained device is the smart card. A smart card is simply a plastic card containing an integrated circuit with some memory and a microprocessor. Typically the memory is restricted to 6K bytes of RAM. It is anticipated that smart card RAM may increase by a few kilobytes over the next few years. However, it is very likely that memory size will continue to be an obstacle to smart card applications. Most smart cards have 8-

bit microprocessors". See also paragraph 0006, which discloses an interface of the card and fig. 2 of Lu, which discloses multiple devices (cards 201cs) communicating with a host device.

Maier (US 2005/0251596) and Lu et al. (US 2005/0108571) are analogous art because they are from the same field of endeavor of communication between a smart card and a computer.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system comprising a main device and an auxiliary device arranged to co-operate with each other as taught by Maier and an infrastructure-less resource-constrained device, for example, a smart card, capable of acting as a full-fledged network node providing secure communication to other nodes on the network and in which the security boundary is located on the infrastructure-less resource-constrained device as taught by Lu.

The motivation for doing so would have been because Lu teaches, **("an infrastructure-less resource-constrained device, for example, a smart card, capable of acting as a full-fledged network node providing secure communication to other nodes on the network and in which the security boundary is located on the infrastructure-less resource-constrained device. Such infrastructure-less resource-constrained devices can easily be adapted so that the resource-constrained device can provide many of the functions traditionally associated with full-fledged network nodes" (see paragraph 0022).**

Therefore, it would have been obvious to combine Maier (US 2005/0251596) and Lu et al. (2005/0108571) for the benefit of creating a smart card to communicate with a host to obtain the invention as specified in claims 1, 10, and 28.

7. As per **claims 4, 13, 22, and 31**, the combination of Maier and Lu discloses "The integrated circuit of claim 1," **[See rejection to claim 1 above]** Maier further discloses "wherein the at least one alternate descriptor comprises at least one device descriptor" **(see paragraph 0008)**.

8. As per **claims 5, 14, 23, and 32**, the combination of Maier and Lu discloses "The integrated circuit of claim 1," **[See rejection to claim 1 above]** Maier further discloses "wherein the at least one alternate descriptor comprises at least one configuration descriptor" **(see paragraph 0009)**.

9. As per **claims 6, 15, 24, and 33**, the combination of Maier and Lu discloses "The integrated circuit of claim 1," **[See rejection to claim 1 above]** Maier further discloses "wherein the at least one alternate descriptor comprises at least one interface descriptor" **(see paragraph 0010)**.

10. As per **claims 7, 16, 25, and 34**, the combination of Maier and Lu discloses "The integrated circuit of claim 1," **[See rejection to claim 1 above]** Maier further discloses

"wherein the at least one alternate descriptor comprises at least one endpoint descriptor" **(see paragraph 0011)**.

11. As per **claims 8, 17, and 26**, the combination of Maier and Lu discloses "The integrated circuit of claim 1," **[See rejection to claim 1 above]** Maier further discloses "comprising at least one memory connected to said processor for storing the at least one default descriptor and
the at least one alternate descriptor" **(see paragraph 0013).**

12. As per **claims 9, 18, 27, and 35**, the combination of Maier and Lu discloses "The integrated circuit of claim 1," **[See rejection to claim 1 above]** LU further discloses "wherein said transceiver comprises a universal serial bus (USB) transceiver" **(see paragraph 0005)**, and wherein said processor operates in a USB mode **(see paragraph 0005)**.

13. As per **claim 19,** Maier discloses "A smart card system **(see fig. 1)** comprising: a host device **(USB host device in fig. 1)** and associated system bus **(USB bus , as discloses in fig. 1)**;

a smart card **(USB device of fig. 1)** to be read by said smart card adapter and comprising a smart card body and an integrated circuit carried by said smart card body, said integrated circuit comprising

a transceiver **(see fig. 1 and paragraph 0006, which discloses an interface of the device)**, and

a processor for communicating with said host device over said system bus via said transceiver, said processor for providing at least one default descriptor **[descriptors (I)]** to said host device **(see paragraph 0043)**,

cooperating with said host device to perform an enumeration based upon the at least one default descriptor **(paragraph 0043 discloses "in a first enumerating step ENUM1, the USB host will enumerate the USB device. In other words, as illustrated in FIG. 2, the USB host will retrieve from the USB device to the USB host only the descriptors (I) associated to the standard service SO and to the mass storage service S1")**, and

providing at least one alternate descriptor **[descriptors (II)]** to the host device and cooperating with the host device to perform a new enumeration based thereon **(ENUM2, as discloses in paragraph 0055) [(see paragraph 0055)]**, based upon allocations of system bus bandwidth to other devices communicating with said host device over the system bus **(see paragraph 0034, which discloses 'allocating' memory base on the bandwidth of devices)**.

Maier discloses the functionality of the smart card and fail to specifically disclose the structure of the card, more than one other device, and a smart card adapter connected to the host.

However, LU discloses a smart card to be an integrated circuit having a transceiver, a processor and descriptors. For example, as evidence in para. 0004,

Lu discloses, "An example of such a resource-constrained device is the smart card. A smart card is simply a plastic card containing an integrated circuit with some memory and a microprocessor. Typically the memory is restricted to 6K bytes of RAM. It is anticipated that smart card RAM may increase by a few kilobytes over the next few years. However, it is very likely that memory size will continue to be an obstacle to smart card applications. Most smart cards have 8-bit microprocessors". See also paragraph 0006, which discloses an interface of the card. See also paragraph 0086, which discloses "["The smart card reader 215(6b) provides an implementation of the Peer I/O Server 613(6b), described in greater detail herein below. The smart card reader 215(6b) connects to the smart card 201(6b) through an ISO standard half-duplex I/O interface and to a host computer 217(6b) via a standard full-duplex I/O interface 607. Because the smart card reader 215(6b) completely handles the ISO 7816 protocol, and connects to the host computer 217(6b) using standard serial protocol, no additional software, beyond that which is normally found on a PC, is needed on the host PC 217(6b)"]." See on the host PC 217(6b)"]." See also fig. 2 of Lu, which discloses multiple devices (cards 201cs) communicating with a host device.

Maier (US 2005/0251596) and Lu et al. (US 2005/0108571) are analogous art because they are from the same field of endeavor of communication between a smart card and a computer.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system comprising a main device and an auxiliary device

arranged to co-operate with each other as taught by Maier and an infrastructure-less resource-constrained device, for example, a smart card, capable of acting as a full-fledged network node providing secure communication to other nodes on the network and in which the security boundary is located on the infrastructure-less resource-constrained device as taught by Lu.

The motivation for doing so would have been because Lu teaches, **("an infrastructure-less resource-constrained device, for example, a smart card, capable of acting as a full-fledged network node providing secure communication to other nodes on the network and in which the security boundary is located on the infrastructure-less resource-constrained device. Such infrastructure-less resource-constrained devices can easily be adapted so that the resource-constrained device can provide many of the functions traditionally associated with full-fledged network nodes" (see paragraph 0022).**

Therefore, it would have been obvious to combine Maier (US 2005/0251596) and Lu et al. (2005/0108571) for the benefit of creating a smart card to communicate with a host to obtain the invention as specified in claim 19.

(20) Response to Argument

The applicant argues that, Maier and Lu, the cited references, combined, does not teach "based upon allocations of system bus bandwidth to the device communicating with the host device over the system bus ".

This argument is not persuasive because paragraph 0034 of Maier discloses, "Two of these four modes require a bandwidth reservation, which is accorded or not by the USB host after an enumeration phase, depending on the bandwidth already reserved by other USB devices, which are plugged onto the USB bus". According to this paragraph, the card is storing data base on the bandwidth already reserved by other USB devices. The applicant's claim language is not specific with respect to 'allocating'. With respect to detach and reattach, as argued in pages 12 and 13 of the brief, paragraph 0034 of Maier discloses of devices that were previously attach to the host.

(21) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Examiner of Record

/Ernest Unelus/ EU

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/Alford W. Kindred/ AWK
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